

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SPIN SPIN AND SPIN LATTICE RELAXATIONS IN COMPLEXES BASED ON
ANTIMONY TRICHLORIDE AND ANTIMONY TRIBROMIDE -U-
AUTHOR-(03)-GRECHISHKIN, V.S., GUSHCHIN, S.I., SHISHKIN, V.A.

CGUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 145-8

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SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SPIN LATTICE RELAXATION, BROMINE ISOTOPE, CHLORINE ISOTOPE,
COMPLEX COMPOUND, NUCLEAR RESONANCE, RAMAN SPECTRUM, ANTIMONY ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

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PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116696

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE FOLLOWING COMPLEXES OF BR AND CL ISOTOPES WERE STUDIED BY MEANS OF NUCLEAR QUADRUPOLE RESONANCE (17-180 MHZ) AND BY RAMAN SPECTROSCOPY: ALPHA-SBBR SUB3, 2SBBR SUB3.-C SUB6 H SUB6, 2SBBR SUB3.PH SUB2 CH SUB2, SBBR SUB3.PHOM, 2SBCL SUB3.PH SUB2 CH SUB2. SIGNALS OF SPIN QUADRUPOLE ECHO WERE OBSD. IN NUCLEI OF PRIME35 CL, PRIME79 BR, PRIME81 BR, PRIME121 SB, AND PRIME123 SB. IN THE CASE OF BR ISOTOPES, QUADRUPOLE RELAXATION INFLUENCES BOTH T SUB1 AND T SUB2. AT 292DEGREESK T SUB1 SIMILAR TO T SUB2. FACILITY: PERM. GOS. UNIV. IM. GOR'KOGO, PERM, USSR.

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1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SIGNAL PICKUP BY THE FAPCH SYSTEM DURING FREQUENCY SCAN -U-

AUTHOR--(02)-SHISHKIN, V.I., SHAKHTARIN, B.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA, NO 1, 1970, PP 74-79

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION

TOPIC TAGS--SIGNAL RECEPTION, FREQUENCY SCANNING, PHASE DETECTOR/(U)FAPCH
SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PRGXY REEL/FRAME--1999/1356

STEP NO--UR/0108/70/000/001/0074/0079

CIRC ACCESSION NO--AP0123314

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0123314
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RELATIONSHIPS ARE DERIVED FOR
PICKUP PROBABILITY AS A FUNCTION OF SCANNING RATE AND THE PARAMETER
VALUES OF THE SYSTEM. THE EFFECT OF PHASE DETECTOR CHARACTERISTIC ON
PROBABILITY OF PICKUP IS ANALYZED. ORIGINAL ARTICLE: SIX ILLUSTRATIONS
AND EIGHT BIBLIOGRAPHIC ENTRIES.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--RADICAL EXCHANGE REACTIONS BETWEEN ORGANOMERCURY COMPOUNDS -U-
AUTHOR--(04)--BELETSKAYA, I.P., BUTIN, K.P., SHISHKIN, V.N., REUTOV, O.A.
COUNTRY OF INFO--USSR
SOURCE--J. ORGANOMETAL. CHEM. 1970, 23(1), 31-9.
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--EXCHANGE REACTION, ORGANOMERCURY COMPOUND, NITRILE,
CHLORINATED ORGANIC COMPOUND, CHEMICAL REACTION RATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125696

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. REACTIONS OF PH SUB2 HG WITH R SUB2 HG (WHERE R EQUALS CN, CCL SUB3, C TRIPLE BOND CPH) IN DMF (STUDIED BY A POLAROGRAPHIC METHOD) GAVE PHGR, OBEYING SECOND ORDER KINETICS. ADDN. OF IODIDE HAS NEGLIGIBLE EFFECT ON THE REACTION RATES. WHEN R EQUALS CFCLCC SUB2 ET, CF SUB2 CO SUB2 ET, CN SUB2 CO SUB2 ME, OR PHCH SUB2 THE REACTION OF PH SUB2 HG WITH R SUB2 HG DOES NOT OCCUR. P,DME GROUPS IN THE DIPHENYLMERCURY INCREASE THE REACTION RATES. THE RESULTS OBTAINED ARE DISCUSSED IN TERMS OF AN S SUBE 2 MECHANISM. FACILITY: DEP. CHEM., MOSCOW STATE UNIV., MOSCOW, USSR.

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UDC: 621.317.337

GROKHOL'SKIY, A. L., SHISHKIN, V. P.

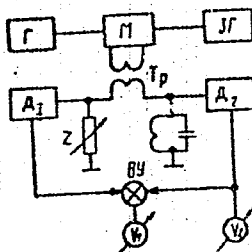
"A Modulation-Difference Method of Measuring the Q of Oscillatory Systems"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Methods. Vol. 1), Novosibirsk, 1970, pp 22-24 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A358)

Translation: It is pointed out that if an AM signal is fed to a tuned circuit, the side frequencies undergo amplitude-phase distortions which are determined by the Q of the circuit and the modulation frequency. The circuit shown in the accompanying diagram is based on the principle of comparing the voltages across the tank circuit and impedance Z. In the figure: Γ is a high-frequency oscillator, $\mathcal{E}$ is an audio oscillator, M is a modulator, Γ_p is a high-frequency transformer, $\mathcal{A}_1$ and $\mathcal{A}_2$ are envelope detectors, Z is a variable resistor, BY is a computer device, V_1 and V_2 are peak-to-peak voltmeters. An expression is derived for the difference voltages, and it is shown that when certain conditions are satisfied V_1 can be graduated in Q units. The proposed method should assure high measurement precision. (See also RZh-Radiotekhnika, 1970, 12A379). E. L.

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GROKHOL'SKIY, A. L., SHISHKIN, V. P., Dokl. Vses. nauchno-tekhn. konferen-
tsii po radiotekhn. izmereniyam. T. 1, Novosibirsk, 1970, pp 22-24



1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE EFFECT OF THE METHOD OF EDGE TREATMENT ON THE FATIGUE
RESISTANCE OF THE COMPONENTS OF METALLIC STRUCTURES -U-
AUTHOR--(02)-SHISHKIN, V.YU., KAUGAN, V.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHEJOYE PROIZVODSTVO, NO 3, 1970, PP 25-26

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--FATIGUE-STRENGTH, METAL ROLLING, BIBLIOGRAPHY, BRIDGE, OXYGEN
GAS CUTTING, STRUCTURAL STEEL, CONSTRUCTION MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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PROCESSING DATE--30OCT70

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CIRC ACCESSION NO--AP0123267

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. RESULTS ARE PRESENTED OF
COMPARATIVE FATIGUE TESTS OF THE ROLLED STEEL PLATES WITH VARIOUS
METHODS OF EDGE TREATMENT (AFTER ROLLING, OXYGEN CUTTING, PLANING) WITH
REGARD TO BRIDGE STRUCTURES.

UNCLASSIFIED

1/2 015
TITLE--A TWO FREQUENCY METHOD FOR CONTROLLING QUADRUPOLE RELAXATION -U-
AUTHOR--(04)-AYNBINDER, N.YE., GRECHISHKIN, V.S., OSIPENKO, A.N., SHISHKIN,
YE.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1543-1548
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR ENERGY LEVEL, QUADRUPOLE MOMENT, EXCITATION ENERGY,
SPIN LATTICE RELAXATION, RELAXATION PROCESS, RF FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AP0127660
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A NUMBER OF NOVEL PHYSICAL EFFECTS WHICH APPEAR ON EXCITATION OF NUCLEAR QUADRUPOLE ENERGY LEVELS WITH TWO FREQUENCIES ARE DESCRIBED. IT IS SHOWN THAT BY INTRODUCING A SATURATING POWER IN TO THE ADJACENT TRANSITION ONE CAN CONTROL SPIN LATTICE RELAXATION. THE METHOD CAN BE EMPLOYED FOR DETERMINING THE RATION OF THE RELAXATION PROBABILITIES AND THE MAGNITUDE OF THE RADIO FREQUENCY FIELD IN A SATURATING PULSE.

UNIVERSITET IM. A. M. GOR'KOGO.
FACILITY: PERMSKIY GOSUDARSTVENNYY

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ALCOHOLATE CATALYZED DECONJUGATION OF ESTRA,4,9,DIEN,3,ONES -U-

AUTHOR--(93)-SHISHKINA, A.A., RZHEZNIKOV, V.M., PIVNITSKIY, K.K.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 138-9

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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--ANDROGEN, ALCOHOLYSIS, CHROMATOGRAPHY

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PROXY REFEL/FRAME--3004/0552

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2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131175

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECONJUGATION OF I AND II BY
TERT-BUOK IN TERT-BUOH (0.9M, 16 HR, 20DEGREES) WAS OBSD. FROM THE
CRUDE PRODUCTS, III OR IV WERE OBTAINED BY CHROMATOG. ON SIO SUB2
(82PERCENT); IV IS RAPIDLY OXIDIZED TO V FROM WHICH VI WAS OBTAINED
(59PERCENT) BY CHROMATOG. ON AL SUB2 O SUB3. ANABOLIC ACTIVITY IN THE
HERSCHBERGER TEST (1953) OF THE HYDROXY DIKETONES (VI) AND DIHYDROXY
KETONES (VII) WAS FOUND TO BE 20PERCENT OF THE ANABOLIC AND ANDROGEN
EFFECT OF TESTOSTERONE PROPIONATE. FACILITY: INST. EKSP.
ENDOKRINOL. KHIM. GORMONOV, MOSCOW, USSR.

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Publications

USSR

V. M. BANShtCHIKOV AND I. A. ShISHKINA (Editors)

Voprosy Kliniki Patogeneza i Terapii Psikhicheskikh Zabolevaniy (Clinical Picture, Pathogenesis, and Therapy of Mental Diseases), abstracts of papers read at a conference of Moscow psychiatrists and neurologists commemorating the 160th anniversary of the founding of Moscow Mental Hospital No 3, 25 September 1972, Moscow, 1972, 464 pp

Translation:

Foreword

This collection contains abstracts of papers read at a scientific and practical conference sponsored by Moscow Municipal Mental Hospital No. 3. It was held at a significant time...to coincide with the outstanding event in the history of our people -- the 50th anniversary of the founding of the Union of Soviet Socialist Republics.

The achievements of the Soviet health system during this brief historic period are known to the entire world. They reflect the constant concern shown by the Soviet state for the health and welfare of the people of our country.

These days medical workers are taking an active part in a socialist competition now under way. Everywhere they are reviewing their accomplishments and discussing the most urgent matters relating to the protection of health and prevention and control of disease. They are outlining ways of dealing with

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and solving the problems presented by the 24th Congress of the Communist Party of the Soviet Union in the field of health care and medicine.

For the Soviet psychiatrists actively engaged in preventive work, the most urgent problems are those connected with the introduction of progressive principles of organizing psychiatric care and use of the best methods of diagnosing and treating mental disease.

The staff of one of the country's oldest mental hospitals, Moscow Mental Hospital No. 3 (the former Preobrazhenskaya Hospital for the Insane), which is carrying on the human traditions nurtured by the generations of progressive psychiatrists who worked within its walls, prepared for the anniversary with great seriousness. One of the results of such preparation was the above-mentioned scientific and practical conference at which the hospital physicians shared their experience. The conference was also timely because it coincided with the completion of the 20-year stage in the "psychopharmacological" era in psychiatry. The radical changes that took place during these 20 years in organizing and providing psychiatric care become quite evident when viewed against the historical background of one of the oldest mental hospitals that recently marked its 160th anniversary.

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This collection includes the reports of prominent clinicians and many practicing physicians working in research organizations, psychiatric clinics, medical schools, and psychoneurological hospitals of Moscow and other cities in the RSFSR. It consists of eight sections devoted to various timely problems pertaining to the prevention, pathogenesis, symptoms, and treatment of mental diseases (schizophrenia, affective psychoses, senile psychoses, epilepsy, endogenous organic psychoses, chronic alcoholism, and "borderline" states).

Special sections are concerned with the history of the hospital and organization of psychiatric care (section I), laboratory and experimental studies (section VIIIO, and casuistic observations (section VIII).

We hope that the proceedings of the conference will be of interest to the broad psychiatric community and of use to the reader.

Editors

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USSR

V. M. RANShChIKOV and I. A. ShISHKINA, Voprosy Kliniki Patogeneza i Terapii Psikhicheskikh Zabolevaniy, 25 September 1972, 464 pp

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USSR

V. M. BANShChIKOV and I. A. ShISHKINA, Voprosy Kliniki Patogeneza i Terapii Psikhicheskikh Zabolevaniy, 25 September 1972, 464 pp

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V. M. BANSChIKOV And I. A. ShISHKINA, Voprosy Kliniki Patogeneza i Terapii Psikhicheskikh Zabolevaniy, 25 September 1972, 464 pp

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17/17

USSR

UDC: 621.396.6:621.315.612

KOFTELEV, V. T., PAYFER, S. I., TROFIMOV, Ye. A., SHISHKINA, I. P.

"Emissivity of Cermets Based on Aluminum Oxide and Molybdenum"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific and Technical Collection. Materials), 1970, vyp. 3, pp 118-119 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V446)

Translation: An investigation was made into the emissivity of pressed and sintered ceramals with composition (16-18) vol.% Mo + 4% BeO+Al₂O₃. A check on various methods of measurement showed that the most reliable is the method of the vanishing reference point: a light beam is directed at the surface of the specimen and the reference (MgO); the illuminance or temperature of the specimen, which is heated by the direct passage of current, is selected in such a way that the brightness of the specimen and reference is equal in monochromatic light. The resultant values of the coefficient of 0.81 (+5%) are considerably higher than the coefficients of emission of the components of the ceramal. N. S.

1/1

USSR

UDO 621.385.032.329

KOFTSLEV, V.T., FAYFER, S.I., SHISHKINA, I.P., VOROB'YEVA, V.D.

"Electrical Conducting Metalc ceramic For Cathode Heaters With Heating By Passage Of Current"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific-Technical Collection. Materials), 1970, Issue 3, p 121 (From RZh--Elektronika i elektronika, No 1, January 1971, Abstract No 1A72)

Translation: An analysis of the temperature dependences of the electrical resistivity of cermets of various compositions showed that the difference of the character of a cermet with heating by passage of currents and with heating by an exterior source of heat is due to the microlocalized superheating of the cermet at the point of contact of the metal particles, one with another. The contact phenomena in the metalc ceramic leads to a reduction of the working temperature of the cermet heaters. In order to increase it, it is recommended that a cermet be used with a comparatively small electrical resistivity and refractory metal components. G.B.

1/1

USSR

UDC 621.385.032.329

KOPTELEV, V.T., FAYFER, S.I., SHISHKINA, I.P.

"Electrical Conducting Metal Ceramic For Cathode Heaters With Heating By An Exterior Source Of Heat"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific-Technical Collection. Materials), 1970, Issue 3, p 122 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A73)

Translation: The paper investigates the limiting theoretically possible working temperature of cermet heaters for the cathodes of electrovacuum devices. In the case of cermets based on Al_2O_3 with an electrical resistivity of ~ 1 ohm. cm, this temperature equals $1850-1900^\circ C$. The theoretically possible working temperature of the cermet heaters can be increased by use of a ceramic phase with high EI [electrical insulating ?] properties and non-interacting components employing metal with a high temperature coefficient, and increasing the porosity of the cermet and the concentration of metal in it. G.B.

1/1

- 117 -

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ANTISTATIC POLY,VINYL CHLORIDE PLASTICS -U-

AUTHOR--(04)-GELFMAN, YA.A., GORBUNOVA, A.S., SHISHKINA, I.V., KUSKOVA,
V.P.

COUNTRY OF INFO--USSR

SOURCE--USSR 263,138

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYVINYL CHLORIDE, ANTISTATIC ADDITIVE, NONETHANOLAMINE,
OLEIC ACID, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1479

STEP NO--UK/0432/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128878

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AA0128878

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CAPACITY OF POLY(VINYL CHLORIDE) PLASTICS TO ACCUMULATE STATIC ELECTRICITY IS DECREASED BY THE ADDN. OF ANTISTATIC AGENTS, SUCH AS A 2:1 MIXT. OF OLEIC ACID AND ETHANOLAMINE. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF NEW CONSTRUCTION MATERIALS.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DECREASE IN THE CAPACITY OF POLY,VINYL CHLORIDE PLASTICS TO
ACCUMULATE STATIC ELECTRICITY -U-
AUTHOR-(04)-GELFMAN, YA.A., GORBUNOVA, A.A., SHISHKINA, I.V., KUSKOVA,
V.P.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,137
REFERENCE--OTKRYITIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--POLYVINYL CHLORIDE, STATIC ELECTRICITY, CHEMICAL PATENT,
ANTISTATIC ADDITIVE, STYRENE, BUTADIENE, BENZENE, COPOLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1407

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128806

UNCLASSIFIED

2/2 017
CIRC ACCESSION NO--AA0128806
ABSTRACT/EXTRACT--(U) GP-0- UNCLASSIFIED
PROCESSING DATE--13NOV70
ABSTRACT. THE CAPACITY OF POLY(VINYL
CHLORIDE) (I) PLASTICS TO ACCUMULATE STATIC ELECTRICITY WAS DECREASED BY
THE ADDN. OF ANTISTATIC AGENTS, SUCH AS A MIXT. OF
STYRENE, DIVINYLBENZENE COPOLYMER WITH NH SUB4 NO SUB3, CORRESPONDING TO
2-7 AND 0.5-3 WT. PERCENT I. FACILITY: ALL UNION SCIENTIFIC
RESEARCH INSTITUTE OF NEW CONSTRUCTION MATERIALS.

UNCLASSIFIED

USSR

UDC: 621.317.783

PRONENKO, V. I., TURUNTSOV, V. V., SEDOV, V. I., SHISHKINA, M. F.
"Design and Manufacturing Technique for First-Class Master Thermistor Milli-wattmeter Converters"

Tr. metrol. in-tov SSSR (Works of Metrology Institutes of the USSR), 1972, vyp. 116(176), pp 135-139 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.1013)

Translation: The paper describes a new design for power converters (thermistor waveguide heads). The advantage of the proposed design is that the thermistor head is a direct load on the calorimetric unit, and therefore power is measured right at the thermistor head. Channels (for flow of the heat-transfer agent) are located on the surface of the thermistor head. Use of the device increases the speed of the system because of the reduced mass of the thermistor head. Development of a new power meter increases the precision of determining the coefficient of conversion of power pickups with waveguide input over a broad frequency band of 37-214 MHz. They can be used with their maximum attainable precision for certification on the initial calorimetric unit. The use of such converters will make first-class precision power meters available. One table, three illustrations.

SHISHKINA O.V.

Geology

Geology

Shishkina O.V.

1. Geology of the Kola Peninsula. Moscow, 1972, 1st paper with ill., 110 pages, 1 r. 57 k.
(Data and experience of analysis of the pre-formation of the Kola Peninsula). Collection of Authors, 1972, 1st paper with ill., 110 pages, 1 r. 57 k.

2. Geology of the Kola Peninsula. Moscow, 1972, 1st paper with ill., 110 pages, 1 r. 57 k.
(Data and experience of analysis of the pre-formation of the Kola Peninsula). Collection of Authors, 1972, 1st paper with ill., 110 pages, 1 r. 57 k.

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(Data and experience of analysis of the pre-formation of the Kola Peninsula). Collection of Authors, 1972, 1st paper with ill., 110 pages, 1 r. 57 k.

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(Data and experience of analysis of the pre-formation of the Kola Peninsula). Collection of Authors, 1972, 1st paper with ill., 110 pages, 1 r. 57 k.

AP9052911

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
PP 104-108

E. P. Fokin, R. P. Shishkina

THE CHANGE OF ENTERING AMINO GROUP ORIENTATION
IN THE DIRECT AMINATION OF CERAMIDONINES
IN THE PRESENCE OF ALKALI

In the presence of alkali (NaOH, KOH, $(C_2H_5)_4N^+OH^-$) direct amination of 2-methylceramidone with aromatic and alifatic amines led to a change of the entering amino group orientation: aromatic amines (aniline, p-anisidine) gave 8-isomers, alifatic amines (methylamine, dimethylamine)-6-isomers preferentially. In the absence of alkali, the interaction of 2-methylceramidone with aromatic amines led to preferred formation of 2-methyl-6-arylaminoceramidones, with alifatic amines 2-methyl-8-alkylaminoceramidones prevailed.

1949 1610

1/2 009
UNCLASSIFIED
TITLE--STRUCTURE AND CHEMICAL REACTIONS OF CARBAZOLE AND ITS DERIVATIVES.
34. CHLOROSULFONATION OF CARBAZOLE -U-
AUTHOR--(03)-SHISHKINA, V.I., PROSHECHKINA, T.I., ZUBAREVA, L.N.
PROCESSING DATE--04DEC70
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2),
269-70
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOLECULAR STRUCTURE, ORGANIC AZOLE COMPOUND, SULFONATION,
CHLORINATION, SULFONIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1129
STEP NO--UR/0153/79/013/002/0269/0270
CIRC ACCESSION NO--AT0134815
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0134815

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN CCL SUB4, A GREAT EXCESS OF
CLSO SUB3 H (I) IS REQUIRED FOR THE CHLOROSULFONATION OF CARBAZOLE (II).
THUS, BY BOILING 4 HR IN CCL SUB4 THE YIELD OF CARBAZOLESULFONYL
CHLORIDE IS NEGLIGIBLE WITH 8:1 I-II, 36PERCENT WITH 15:1 I-II, AND
85PERCENT WITH 30:1 I-II. THE K SALTS OF CARBAZOLE, 3,6,DISULFONIC AND
1,3,6,TRISULFONIC, AND THE NA SALT OF CARBAZOLE, 1,3,6,8,TETRASULFONIC
ACID WERE CHLOROSULFONATED IN 86-94PERCENT YIELD WITH 30 FOLD EXCESS OF
I. IN MENO SUB2 OR DIOXANE, I IS NOT CHLOROSULFONATED. IN THE ABSENCE
OF CCL SUB4, A GOOD YIELD OF CARBAZOLESULFONYL CHLORIDE IS OBTAINED BY
HEATING 0.024 MOLE I 4 HR WITH 0.432 MOLE II AT 100-10DEGREES.
FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 017
UNCLASSIFIED
TITLE--INHIBITION OF THE OXIDATION OF ISOPRENE RUBBER BY QUINONE IMINES
-U-
AUTHOR--(05)-RAEVSKIY, A.B., ROMANOVA, A.B., YESINA, T.I., SHISHKINA, V.V.,
KOVRIZHKO, L.F.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA, 1970, 29(3), 9-10
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--OXIDATION INHIBITION, ISOPRENE, QUINONE, IMINE, SYNTHETIC
RUBBER, EPR SPECTRUM, FREE RADICAL/UISKID POLYISOPRENE RUBBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0453
CIRC ACCESSION NO--AP0119389
STEP NO--UR/0138/70/029/003/0009/0010
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119389

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ADDN. OF SIMILAR TO 1.0PERCENT
N, N-DIPHENYL, P, BENZOQUINONEDIIMINE (I) OR
N, BETA, NAPHTHYL, P, BENZOQUINONEDIIMINE (II) TO SKI-3 (POLYISOPRENE
RUBBER) IMPROVED ITS RESISTANCE TO OXID. AT 120DEGREES. EPR
SPECTROSCOPY SHOWED THAT I AND II FORM, DURING HEATING, FREE RADICALS OF
LARGE MOL. WTS., WHICH PARTICIPATE IN THE INHIBITION OF SKI-3 OXID.
FACILITY: VORONEZH, FILIAL VSES. NAUCH.-ISSLED., INST. SIN. KAUCH,
IM. LEBEDEVA, VORONEZH, USSR.

UNCLASSIFIED

USSR

UDC 631.547.04:633.2/.3

MIKHAYLICHENKO, B. P., and SHISHKINA, Z. S., All Union Scientific Research
Institute of Feeds

"Use of Chlorocholine Chloride for the Treatment of Meadow Fescue Grass and dew
Grass Seedlings"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 10 (120), 1973, pp 58-60

Abstract: The preparation tur did not prevent the tumbling of fescue grass
seedlings and did not increase the crop of its seeds. Treating the dew grass
seedlings during the tillering phase with the retardant, the growth of the
plants was slowed down, affecting positively their resistance to tumbling.

1/1

USSR

UDC 599.323.4:616.986.7(470.42)

YEVDOKIMOVA, O. A., and SHISHKINA, Z. S., Laboratory of Leptospiroses,
Institute of Epidemiology and Microbiology, Academy of Medical Sciences USSR,
Moscow

"The Role of the Muskrat in a Natural Focus of Leptospirosis in Ul'Yanovskaya
Oblast"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 7, 71, pp 1,116-1,119

Abstract: The area surrounding Yaik and Peschanoye lakes in Ul'yanovskaya oblast is a focus of leptospirosis. It is also a natural habitat of *Ondrata zibethica* (muskrat), *Arvicola terrestris*, and *Microtus oeconomus*. In an investigation performed in 1967 and 1968, 64 muskrats were caught along with other rodents. Bacteriological, and serological tests revealed the presence of four *Leptospira* strains: three *L. grippotyphosa* and one *L. bataviae*. Of 104 *Microtus oeconomus* specimens examined, 26 were infected with *L. grippotyphosa* one with *L. bataviae*, and four with both. Of 54 *Arvicola terrestris* examined 9 were infected with *L. grippotyphosa*. Of 64 *Ondrata zibethica*, 21 were infected with *L. grippotyphosa* and three with *L. grippotyphosa* and *L. bataviae*. This was the first time that *Leptospira* of the *bataviae* serotype were isolated from

1/2

- 53 -

USSR:

YEVDOKIMOVA, O. A., and SHISHKINA, Z. S., Zoologicheskii Zhurnal, Vol 50, No 7, 1971, pp 1,116-1,119

muskrats in the USSR. Since the percentage of muskrats infected with Leptospira was high (37.5%), it is concluded that muskrats play an important role in the maintenance and spread of leptospirosis in the area surrounding Yaik and Peschanoye lakes.

2/23

USSR

UDC 621.372.832.43

RESHNIKOV, V. V., SHISHKINSKIY, V. Ye., BERSHADSKIY, G. Sh.

"A Resonance Power Diode for the Decimeter Wavelength Band"

Elektron. tekhnika. Nauch.-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), 1970, vyp. 8(40), pp 98-99 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7B171)

Translation: The paper describes the construction of a resonance diode for the decimeter wave band, designed for a high SHF power level. The design utilizes a ferrite-magnesium chromite insert, and also an effective system for heat removal from the insert. The diode can dissipate up to 6 kW of power. One illustration. Resumé.

1/1

USSR

UDC 678.06-412:677.521.01:50

SHISHKO, V. I., BARANOVSKIY, V. V., AVRASIN, YA. D., REMOT, V. B., YAKIMOV, B. V., ZABEYVICH, V. N., and VALILENKO, M. G.

"Glasstextolites Based on Non-Woven Fiberglass Reinforced Materials"

Moscow, Plasticheskiye Massy, No 3, 1972, pp 70-73

Abstract: Properties are described of the binding, suturing non-woven fiberglass materials and glasstextolites made from them for structural materials, and electrical insulation. It was established that it is economically feasible to use the nonwoven materials in production of glasstextolites for various purposes. Production of non-woven fiberglass reinforced materials from non-woven glass thread facilitates the production expansion of the glasstextolites and reinforced plastics, both in regard to the volume and variety of materials. One of the most promising materials, in this area is the VER-10 reinforcing material consisting of two glass laminated systems, in which 10 layers are overlaid at 90°, stitched with glass thread.

1/1

USSR

UDC 669.1:538.248

TELESNIN, R. V., SHISHKOV, A. G., OSUKHOVSKIY, V. E., SIGOV, A. S., and OSUKHOVSKAYA, L. P., Moscow State University imeni M. V. Lomonosov; Far-Eastern State University

"Coercive Force and Creeping of Domain Walls in Permalloy Films 200-1000 Å Thick"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 5, 1973, pp 959-967

Abstract: Using Permalloy films (79NMA alloy) of various thickness, an attempt was made to show that creep intensity is a function of film thickness. Films were deposited under vacuum (10^{-5} mm Hg) on polished glass substrates at 250°C in the presence of a magnetic field of 150 oersted. Creep of domain walls was practically absent in films $d < 200$ Å. Maximum creep was observed in films 500-600 Å thick. Films $d > 1200$ Å showed a gradual increase in creep with thickness. A definite relation exists between the creep and the density of cross links in films. The creep of domain walls in films $d \sim 700$ Å took place as the result of sagging of long wall sections containing the largest number of cross links. In general, the creep rate in films 900-1000 Å was slower than that in films with $d \sim 700$ Å. The coercive force of the Neel $1/2$

USSR

TELESNIN, R. V., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 5, 1973, pp 959-967

sections between the cross links did not depend on the film thickness and was ~ 0.1 oersted. As was evident from the powder patterns, the sagging of Neel sections between cross sections takes place uniformly on the film surface. The coercive force (H_{cH}) for films 200, 500, and 800 Å was 0.06, 0.08, and 0.12 oersted, respectively. The coercive force of sections between the sagging points on cross links was $H_c = 0.2-0.3$ oersted (minimum) for 500-700 Å films. It was lower for 200-500 Å films because of intensive scattering of fields which facilitate the breaking of cross links. The macroscopic coercive force of the domain boundary displacement (the starting field of the boundary, H_{cst}) did not change with the film thickness within 200-1000 Å. The value of H_{cst} characterizes the maximum height of potential barriers in front of the domain boundaries. These barriers are represented by points, and they are chaotically distributed on the film surface at a distance of 40-100 Å from each other. Their height varied within several critical values in the interval of 0.3-1.0 oersted. The distance between neighboring points of the domain boundary attachment was responsible for the maximum creep in ~ 600 Å films.

2/2

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Radiation Chemistry

USSR

UDC 541.15

ASATOV, KH., DZANTIYEV, B. G., ~~SHISHKOV, A. V.~~ Institute of Chemical Physics of the USSR Academy of Sciences, Order of the Red Banner of Labor Institute of Cybernetics with the Computation Center of the Uzbek SSR Academy of Sciences

"Radiolysis of the Nitrogen-Propylene System. Formation of Nitrogen-Containing Products"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 3, 1972, pp 50-53

Abstract: A study was made of the gamma-radiolysis of the binary nitrogen-propylene system at a pressure of 760 mm Hg, for a dosage of $\approx 10^{13}$ electron volts/cm²·sec and variation of the system composition (1-90% C₃H₆), the temperature (20-285°) and the absorbed dose within broad limits. HCN and CH₃CN were identified among the nitrogen-containing products. The radiation chemical yields of HCN and CH₃CN depend extremely on the composition of the N₂C₃H₆ system, reaching a peak at 1-5 and 20% C₃H₆ respectively. The generation rate of N atoms during radiolysis of molecular nitrogen in the presence of C₃H₆ is 0.9-1.0 1/100 electron volts.

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USSR

KAZAKOV, V. G., SHAYKHINA, V. A., ~~SHISHKOV, A. G.~~ and ~~SHISHKOV, A. G.~~ Institute of Pedagogical Sciences, Moscow State University, Moscow, U. S. S. R.

"Influence of Elastic Stresses on Slipping at Interdomain Boundaries in Nickel Films"

Sverdlovsk, Fizika Metalla i Metallovedeniye, Vol 30, No 1, 1975, pp 1-6

Abstract: The slipping rate is studied as interdomain boundaries in nickel films as a function of the elastic stresses applied. It is shown that the stresses resulting in an increase in σ_y of the films lead to a change in the curves $V(\sigma_y)$ where $V_y = \text{const}$ in the area of high values of the σ_y values. Both the curves of equal velocities and the V (independent curves) of the films of the boundary correspond to corrected a graininess under the film.

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USSR

UDC 577.4

~~SHISHKOV, D. B.~~

"Minimization of Finite Automata"

Kybernetika, 1972, Vol 8, No 4, pp 297-316 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V252)

Translation: Two approaches to the minimization of finite automata are compared: reduction of the number of their internal states and minimizing the structure of the execution of the automata. A survey of methods of solving the first problem is presented, and a second approach is represented by an original algorithm.

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USSR

UDC 621.039.51

YUROVA, L. N., RCHODANOV, V. L., SMIRNOV, V. YE., PANKRATENKO, D. A., and SHISHKOV, L. K.

"Application of the Method of the Pulsed Neutron Source to Systems With Heterogeneities"

Fiz. Yadern. Reaktorov (Nuclear Reactor Physics -- Collection of works), No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

Translation: Neutron physics problems are frequently solved by applying the theory of perturbations -- to calculate the change in criticality of nuclear reactors or various neutron flux functionals. The possibility is studied of using the theory of perturbations for calculation of reactor shielding. The theory of perturbations (generally speaking of high orders) can also be applied to the unstable equation of neutron transfer. In the experiments described with pulsed neutron source, a change in decay constants was achieved by two means: by changing the geometric size of the specimen or by changing its diffusion charac-

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USSR

UDC 621.039.51

YUROVA, L. N., ROMODANOV, V. L., SMIRNOV, V. YE., PANKRATENKO, D. A., and SHISHKOV, L. K.

"Application of the Method of the Pulsed Neutron Source to Systems With Heterogeneities"

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Translation: Neutron physics problems are frequently solved by applying the theory of perturbations -- to calculate the change in criticality of nuclear reactors or various neutron flux functionals. The possibility is studied of using the theory of perturbations for calculation of reactor shielding. The theory of perturbations (generally speaking of high orders) can also be applied to the unstable equation of neutron transfer. In the experiments described with pulsed neutron source, a change in decay constants was achieved by two means: by changing the geometric size of the specimen or by changing its diffusion characteristic.

USSR

YUROVA, L. N., et al., Fiz. Yadern. Reaktorov, No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

teristics (introduction of absorbers or scattering agents in homogeneous or discrete form, etc.). In the experiment discussed, the additional possibility is demonstrated of changing the decay constant by changing the position of heterogeneities in the moderator with constant volume ratio. This provides a method for studying the diffusion characteristics of heterogeneous systems or systems with local heterogeneities, since a new experimental dependence appears and, consequently, it can be compared with various calculation methods. 8 figures, 7 biblio. refs.

2/2

USSR

UDC: 669.189:621.746.7.001

BORISOV, V. T., VINOGRADOV, V. V., DUKHIN, A. I., MANOKHIN, A. I.,
MATVEYEV, YU. YE., SOKOLOV, L. A. and SHISHKOV, V. T., (Moscow)

"Applicability of the Quasi-Equilibrium Two-Phase Zone Theory to the
Description of Ingot Crystallization"

Moscow, Izvestiya Akademii nauk SSSR, Metally, no 6, Nov-Dec 71, pp 104-109

Abstract: Increasing the requirements on metal quality necessitates more intimate knowledge and in-depth analysis of the fine points of alloy crystallization phenomena. Noteworthy, in this case, is the study of the quasi-equilibrium two-phase zone of an alloy -- a region in which thermal, diffusion, and other processes accompanying the formation of the ingot's structure take place. This study is an attempt to test the applicability of the theory to computer analysis of the crystallization of a metal ingot. Described is a crystallizer designed for the study of thermal conditions in the two-phase zone of an ingot for crystallization at both low and high cooling rates. A mathematical arrangement is proposed characterizing a crystallizing ingot in terms of the new theory. The correlation of the theoretical results with the experimental data indicates that the proposed

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Single Crystals

USSR

UDC 669.273.018.45.548.55.620.193.669.977

PIKUNOV, M. V., SHISHKOV, V. V.

"Purity and Perfection of Tungsten Single Crystals"

Nauchn. Tr. N-i. Proyechn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 189-195. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I709 by the authors).

Translation: The correspondence of calculated and experimental data on the purification of W by electronic crucibleless zone melting to remove Fe, Cr, Mo, and V is established. A difference in hardness on the surfaces corresponding to various crystallographic planes is detected, the values of hardness on the section changing as a function of orientation of the diagonals of the imprint relative to the crystallographic axis. 1 fig; 2 tables; 28 biblio refs.

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Publications

USSR

UDC 636.619

SHISHKOV, V. Ye., BESSMERTNYKH, A. A., and MUSTAFAYEV, G. A.

Profilaktika i Likvidatsiya Yashchura (Prophylaxis and Eradication of Foot-and-Mouth Disease), Moscow, Rossel'khozizdat," 1971, 64 pp

Translation:

Table of Contents	Page
Characteristics of the Agent of the Disease	5
Clinical Indexes and Diagnosis of Foot-and-Mouth Disease	10
Measures for the Prevention and Eradication of Food-and-Mouth Disease	20
Disinfection Measures	26
Vaccination of Farm Animals Susceptible to Food-and-Mouth Disease	32
Passive Immunization in Foot-and-Mouth Disease	36
Treatment of Animals Infected with Foot-and-Mouth Disease	39
Examples of Prophylaxis and Control of Foot-and-Mouth Disease in Different Farms	43

Power

USSR

UDC[621.362:538.4].001.24

POPYRIN, L. S., PSHENICHNOV, N. N., KOSHCHEN, A. M., KHOKHLOV, L. K.,
SHISHKOV, Ye. V.

"Calculated Studies of Open-Cycle Power Magnetohydrodynamic Generators"

V sb. Teplotekhn. probl. pryamogo preobrazov. energii (Heat-Engineering Problems of Direct Energy Conversion--Collection of Works), Issue 2, Kiev, "Nauk. dumka," 1971, pp 3-11 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A173)

Translation: The results are presented of calculations on an electronic computer of the effect of finite (scalar) conductivity on the characteristics of a magnetohydrodynamic (MHD) channel, its length and profile, and also the results of a calculation of the cost of the MHD channel and the SP [?inherent parameters] of the magnetic system as a function of the finite conductivity and the temperature of heating up of the oxidant. The calculations were made with the aid of a mathematical model, worked-out at the Siberian Power Engineering Institute of the Siberian Department of the Academy of Sciences, USSR, for thermodynamic and technical-economic studies of composite power plants with open-cycle MHD. 3 ill. 2 tab. 2 ref.

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USSR

UDC [621.362:538.4]-16:537.56.001.2

ZAGORODNIKH, A.V., KHOKHLOV, L.K., SHISHKOV, YE.V.

"Concerning Vaporization Of An Ionizable Additive With Various Methods Of Introducing It Into The Loop Of A Magnetohydrodynamic Generator Based On The Products Of Combustion Of Natural Gas"

V sb. Teplo tekhn. probl. pryamogo preobrazov. energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 60-66 (from RZh--Elektrotehnika i energetika, No 12, Dec 1971, Abstract No 12A180)

Translation: The following methods of introducing the additive (K_2CO_3) are considered: introduction of additive in an aqueous solution; introduction of powder-like additive; introduction of additive produced in the form of rods or slabs [plitka] into the combustion chamber through a packed window in the wall; introduction of additive through a plasmotron (e.g., using it in pressed form as one of the electrodes). Dependences are given by which it is possible to determine the effectiveness of the applicable method and also to choose a point of entry and the dispersion of the additive. 1 ill. 6 ref. [Osoboye konstruktorskoye byuro novogo oborudovaniya Ministerstva energetiki i elektostantsiy SSSR--Special Design Bureau For New Equipment, Ministry Of Power And Electric Power Plants Of The USSR] V.P. Bogatyrev.

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USSR

UDC 577.3

SHISHLO, M. A.

"The Effect of a Magnetic Field on Enzymes, Tissue Respiration, and Some Aspects of Metabolism in the Intact Organism"

Vliyaniye Magnitnykh Poley na Biologicheskiye Ob"yekty, pp 24-40

Abstract: During a discussion of the author's own data and literature data on the effect of magnetic fields on metabolic processes in different biological objects, the author expresses his opinion on the nonspecific nature of this effect. Change in the rate of aging of enzymes in vitro, change in the ratio of free and phosphorylating oxidation, intensification of glycolysis, stress reaction in the whole organism, and etc., become foremost. It is likely that the magnetic field, changing the energy of weak interactions, has an effect on the supramolecular organization of living structures, which may lead secondarily to quantitative changes in chemically specific reactions. The possibility of magnetic fields affecting the biological objects through changes in the properties of water is not excluded.

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USSR

UDC 639.2.081.7

SEISHKOVA, Ye. V., NIKOLAYEV, A. S., and SIZOV, I. I.

"Noises Produced by Kamchatka Crabs"

Moscow, Rybnoye Khozyaystvo, No 3, Mar 71, pp 22-25

Abstract: Since sonic devices are not very useful for locating crabs at the bottom of the sea, the feasibility of detecting the presence of crabs by recording ocean sounds was investigated. The study was performed off the west coast of Kamchatka. Ocean sounds were recorded by means of hydrophones lowered into water in areas known to be inhabited by schools of crabs, while similar sound records were taken from an aquarium kept onboard a ship and filled with crabs caught in the same area. Analysis of the records revealed that crabs produce specific high-frequency noises which tend to form brief "explosion waves" as a result of many crabs joining in brief choir-type vocalizations. Due to the specific pattern and an intensity 8-20 decibels above the ocean background noise, the method appears to be useful for practical application.

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Automatic Control: Instruments

USSR

UDC 681.325+62-52

LISICHKIN, D. A., LOSHCHININ, A. A., PROKOSHEVA, V. V., SHISHKOVA, Yu. I.,
SHCHUKIN, A. I.

Operatsionnyye Ustroystva EVM i Avtomatiki (Operational Devices for Computers
and Automation), Moscow, "Sovetskoye Radio," 1972, 255 pp

Abstract: The book proposes methods for designing and determining the characteristics of operational amplifiers and converters for changing analog quantities to digital code. The theory is outlined and methods are presented for determining static and dynamic characteristics and errors. Consideration is given to synthesis of optimum structures for the amplifiers and converters and to ensuring their operational stability. Examples of calculations and circuits for elements in high-amperage converters are given.

A distinguishing feature of the book is analysis of operational devices as complex units, and synthesis of calculations by the method of successive approximations for computer application.

The book is written for engineers and technicians, as well as for advanced college and university students as a text in the development and design of operational amplifiers and analog-digital converters.

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USSR

UDC 531.781.2:621.382

BAKHTINOV, V. V., Engineer, GAMPER, I. G., Candidate of Technical Sciences,
SHISHLYANNIKOV, B. M., Engineer

"p-Type Silicon Diffusion Strain Resistors"

Moscow, Pribery i Sistemy Upravleniya, No 1, Jan 71, pp 59-60

Abstract: A new diffusion strain resistor is discussed in this article. It is pointed out that the use of a thin strongly alloyed layer of semiconducting material only a few microns thick as the resistor has a number of advantages over uniformly alloyed strain resistors: e.g., much weaker dependence of the resistance and strain sensitivity factor on temperature, possibility of obtaining practically any rated resistance, use of the strain resistor as an elastic element (beam) in which the strain-sensitive layer is bound to the body of the beam by atomic bonds, significantly improving the thermal contact of the strain sensitive elements with the base and eliminating problems caused by the presence of glue.

The procedure used to obtain p-type diffusion layers and to investigate the characteristics of diffusion strain resistances is described. Graphs are presented showing the strain sensitivity factor S as a function of the surface concentration N_s in diffusion layers of p-Si at $T = 293^\circ\text{K}$, the strain

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USSR

BAKHTINOV, V. V., et al., Pribery i Sistemy Upravleniya, No 1, Jan 71, pp 59-60

sensitivity factor S as a function of the temperature T for different N_g [surface concentration of the diffused admixture] in cm^{-3} , α_R [the thermal resistance coefficient] of the p-Si diffusion layers as a function of the surface concentration N_g , and the static characteristic of a p-type silicon diffusion strain resistor.

The research led to manufacture of diffusion strain sensitive elements of the cantilever type with the following parameters:

Resistance of upper and lower strain resistors in ohms	55
Resistance dispersion in %	+5
Insulation resistance in kilohms	60-100
Geometric dimensions in mm	7x0.6x0.15
Thermal coefficients of strain sensitivity and resistance	
in degrees ⁻¹ :	
α_g	$1.3 \cdot 10^{-3}$
α_R	$1.5 \cdot 10^{-3}$

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USSR

UDC 621.359.7

SHISHLYANNIKOV, L. A., SHOSTAK, F. T., YERGOZHIN, YE. YE.

"Results of the Operation of the Mointy Demineralization Electrodialysis Pilot Plant"

Vestn. AN KazSSR (Kazakh SSR Academy of Sciences Vestnik), No 2, 1972, pp 44-51
(from RZh-Khimiya, No 12, Jun 72, Abstract No 12L276)

Translation: A study was made of the results of three years of operation of the Mointy demineralization electrodialysis station. An analysis of the operational characteristics of the MK-40-2s and MA-40-2s ion-exchange resin diaphragms is presented, and the technical-economic indexes of the station are given.

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USSR.

UDC 621.359.7:629.1

SHISHLYANNIKOV, L. A., SHOSTAK, F. T., and YERGOZHIN, Ye. Ye.

"Performance Results of the Pilot Industrial Plant "Mointy" Producing Fresh Water by Electrodialysis"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 44-51

Abstract: An analysis is presented of the effectiveness, maintenance cost, and reliability of a pilot plant built in the Kazakh SSR, and operated for three years, 1968-1971. The plant produces 160 m³ water/day at a cost of 87 kopeks/m³ of water. The fresh water obtained contained on the average: dry residue 1087 mg/liter, chlorides 215 mg/liter, sulfates 400 mg/liter, hardness of water 4.9 mg-equivalent, pH 6.5, as opposed to 3080, 620, 1200, 16.4, 7.5, respectively, in the initial water. The average consumption of energy was 2.2 K₆W₆ H/m³ water. Deposits on anion and cation exchange filters consisted mainly of Ca and Mg sulfates, and SiO₂. The plant was capable of demineralizing cold water (8°) with high concentration of sulfates and sodium (up to 50% sulfates) with hardness up to 30 mg-equivalent/liter. It also produced concentrated water solutions with 8-10 g salts/liter, with hardness up to 90 mg-equivalent/liter. The water treatment was controlled

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USSR

SHISHLYANNIKOV, L. A., et al., Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 44-51

by semiautomatic control equipment, and the salt concentration in water, by simple visual conductometric indicators and chemical water analysis. A detailed description of filters, their replacement procedures and maintenance is given, along with the evaluation of steels and other materials used in pumps and other equipment.

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USSR

UDC 661.1:542.65:539.23:539.24

DYMCHENKO, N. P., SHISHLYANNIKOVA, J. M., YERMAKOV, N. I., and URAZALIYEV, U. S., Moscow State Pedagogical Institute imeni V. I. Lenin and Moscow Oblast Pedagogical Institute imeni N. K. Krupskaya

"Electron-Optical and X-ray Diffractometric Study of St-50-1 Sital Substrate Structure"

Moscow, Neorganicheskiye Materialy, Vol 9, No 10, Oct 73, pp 1794-1797

Abstract: Electronography, electron microscopy, and x-ray diffractography were used to study phase composition and substructure of the surface layers in ST-50-1 sital substrates. It was found that sital films deposited on unheated substrate bases were quite different from those deposited on heated bases. For crystalline TiO_2 (rutile), a small size of coherent scattering regions and mean-square microdeformations were characteristics in the sital. In relation of crystallographic direction, characteristic for crystalline TiO_2 in sital, anisotropy of the sizes of coherent scattering regions and magnitude of mean-square micro-deformations are pronounced. It was suggested that in the formation of thin films, the phase and micro-structural heterogeneities of the sital surface layers are conducive to electrical defects and lead to a nonuniform distribution of electrical defects in the film condensates. Two figures, nine bibliographic references.

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USSR

UDC 666.1.542.65:539.23.543.422.8

DYMCHENKO, N. P., SHISHLYANNIKOVA, L. M., YERMAKOV, N. I., URAZALIYEV, U. S.
ZAUMYSLOV, YU. V., and MOCHALOV, A. I., Moscow State Pedagogical Institute
imeni V.I. Lenin and Moscow Oblast Pedagogical Institute imeni N. K. Krupskaya

"X-Ray Diffractometric Study of Grade St-50-1 Sital Substrate Phase
Composition"

Moscow, Neorganicheskiye Materialy, Vol 9, No 10, Oct 73, pp 1791-1793

Abstract: Three batches of grade ST-50-1 sital substrates from industrial production were investigated as to reproducibility of phase composition from point to point on one substrate for each of the three batches, then on reproducibility of phase composition from substrate to substrate in the first, second, and third batches, respectively. Sital ST-50-1 is an oxide composition containing (in %): 60 SiO_2 , 13 Al_2O_3 , 9.5 FeO , 7.5 CaO , and 9.0 TiO_2 . Careful analysis of the x-ray diffractograms revealed that, in addition to an amorphous phase, the ST-50-1 sital substrate has two other phases: TiO_2 in the form of rutile and MgSiO_3 (clinoenstatite). Reproducibility from substrate to substrate in a batch and from batch to batch was good. Three-hour heat treatments at 200, 400, and 600°C had no effect on sital substrate composition. One figure, one table, three bibliographic references.

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USSR

UDC 669.295-41:538.22.082.78

SHISHLYANNIKOV, V. F., BRYUKHANOV, A. A., STEPANENKO, Yu. A.

"Study of the Anisotropy of Magnetic Properties of Titanium Sheets"

Moscow, Zavodskaya Laboratoriya, No 11, 1972, pp 1357-1358.

Abstract: This work studies the anisotropy of the magnetic properties of sheet titanium, and develops a method for testing and analysis of textures formed in titanium sheets during their manufacture. The method is based on radio-frequency study of magnetic anisotropy of textured sheets and other materials with hexagonal lattices. The error of measurements does not exceed 1%.

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USSR

UDC 548.316.2:669.295

SHISHMAKOV, A. S., ADAMESKU, R. A., and MIRZAYEV, D. A., Ural Polytechnic
Institute imeni S. M. Kirov

"Packing Defects in Titanium α -Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 442-443

Abstract: An x-ray study was made of the probability of deformation packing defects in titanium α -alloys with aluminum and tin in which the sliding takes place according to different systems. The magnitude of the diffraction widening β_{hkil} due to packing defects, calculated from

$$\beta_{hkil} = B_{hkil} - \frac{b^2}{B_{hkil}}, \text{ where } B_{hkil} = \text{half width of the } \{hkil\} \text{ line}$$

and b =half width of the $\{0002\}$ line, shows that the probabilities of deformation defects in titanium iodide and alloys with less than 1% Al and 2% Sn, are low. However, a further increase of the Al content up to 3.58% effects a sharp increase of the probability of deformation defects. The packing defect energy in the (0001) plane of Ti-1.86% Al, Ti-3.58% Al, and Ti-8.27% 1/2

USSR

SHISHMAKOV, A. S., et al., Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 442-443

Sn-0.7% Al is considerably lower than the energy in alloys with smaller contents of alloying elements. Obviously, there exists a correlation between the probability of deformation packing defects and the deformation mechanism of hexagonal titanium alloys. One table, eleven bibliographic references.

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USSR

UDC 669.295'71-176

SHISHMAKOV, A. S., ADAMESKU, R. A., and GEL'D, P. V.

"Cold Rolling Texture in Ti-Al Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 123-129

Abstract: Titanium alloyed with aluminum (0.36, 0.59, 1.04, 2.0, and 3.50% Al) was cast into 40-g ingots and hot rolled at 1100°C to a thickness of 10 mm followed by warm rolling at 800°C to a thickness of 4mm. The sheets were then annealed at 750°C for 1.5 hours. Cold rolling was performed to deformations of 20, 40, 60, and 70% in one direction on a mill with 260-mm diameter rolls. Final working of the alloys to 90% total reduction was done on a laboratory mill with 50-mm-diameter rolls. Texture was examined by x-ray diffraction.

It was ascertained that alloying titanium with aluminum alters cold rolling texture from (0001)_± < NN-PN /1010/ (unalloyed titanium and alloys containing up to 1% Al) to (0001)_± < NN-NP/1010/ and (0001)/1010/(alloys containing from 2 to 4% Al). /NN--direction normal to plane of the sheet; PN--transverse direction relative to direction of rolling; NP--direction of rolling/.

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USSR

SHISHMAKOV, A. S., et al., Izvestiya Akademii Nauk SSSR, No 2, Mar-Apr 72, pp 123-129

It was concluded that the texture change starts sooner in the internal layers as opposed to the external layers and that with increased aluminum content the start of texture alteration shifts to the region of minimum deformation. In alloys with 1-2% aluminum, in the region of average deformations ($\epsilon = 60$ and 40% respectively), there was observed an asymmetrical distribution of basal planes relative to the transverse direction. Four figures, 1 table, 9 bibliographic references.

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USSR

UDC: 519.95

SHISHMAKOV, V. S.

"Differential Aiming Game With Information Delay, Part 2"

Novosibirsk, Upravlyayemyye sistemy, No 8, 1971, pp 3-12.

Abstract: This is the second part of an article begun with No 7, 1970 of the journal mentioned above. The first part of the article considered the differential game of aiming at a specified set; the current part is based on the description given in the first part of the programmed problem and plots optimal control for the first player. By the rules of the game, the first player tries to bring the controlled system to bear on a prominent, closed set, while the second player tries to thwart him. In this article, the game situation is viewed from the vantage point of the first player, who sets up his control program on the basis of information furnished him. Some problems in the strategy are considered and several theorems are stated and proved. The author credits N. N. Krasovskiy with posing the problem and contributing his advice.

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USSR

UDC 542.91:541.69:547.362:547.555.9

SHISHMAKOVA, T. G., BARDAMOVA, M. I., KONYASHEVA, N. V., KOTLYAREVSKIY, I. L.,
PERSHIN, G. N., and MIKERINA, A. L., Institute of Chemical Kinetics and Com-
bustion, Siberian Branch Acad. Sci. USSR, and Chemical-Pharmaceutical In-
stitute, Acad. Med. Sci. USSR

"Synthesis and Study of the Antimicrobial Activity of the Amino Derivatives of
4-Hydroxy-4'-ethynylazobenzene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72,
pp 978-980

Abstract: 20 g of 4-Hydroxy-4'-acetylazobenzene (I) was refluxed for 3 hrs
with 11.6 g K_2CO_3 , 150 ml acetone, and 15.2 g allyl bromide, cooled, and
poured into water. Solid material was obtained and after recrystallization
from alcohol yielded 17.9 g 4-allyloxy-4'-acetyl-azobenzene (II), m. p. 130-
132. (II) was hydrogenated over Pd/CaCO₃ to yield 4-propoxy-4'-acetyla-
zobenzene (III), m.p. 117-120°. Chlorination of (III) followed by dehydrochlori-
nation yields 4-propoxy-4'-ethynylazobenzene, m.p. 97-98°. Mannich conden-
sation of that product yields 4-propoxy-4'-(piperidinopropyne-1"-yl-1")-azo-
benzene, m.p. 188-190°. However, the free hydroxy analogue -- 4-hydroxy-4'-
ethynylazobenzene reacts only with difficulty via the Mannich condensation

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USSR

SHISHMAKOVA, T. G., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 978-980

giving low yields of 4-hydroxy-4'-(morpholinopropyn-1"-yl-1")-azobenzene (VI), m.p. 250-253° and 4-hydroxy-4'-(piperidinopropyn-1"-yl-1")-azobenzene (VIII), m.p. 177-178°. (VII) showed a rather high antitubercular activity, surpassing (VI). Several analogues of (VII) were bioassayed, but none showed any activity. It was concluded that in order to have biological activity a compound must have a free hydroxyl group and a single triple bond.

2/2

39

USSR

UDC 541.69+547.551+547.362

PERSHIN, G. N., MILOVANOV, S. N., MIKHEVA, A. L., SHISHKOVA, T. G.,
BARDAMOVA, M. I., and KOTLYAREVSKIY, I. L., All-Union Chemical-Pharma-
ceutical Scientific Research Institute Imeni S. Ordzhonikidze, and
Institute of Chemical Kinetics and Combustion of the Siberian Division
of the Academy of Sciences, USSR

"Bacteriological Properties of Some Aromatic Mono- and Diacetylene
Amines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8,
Aug 70, pp 1904-1906

Abstract: Continuing their studies on the germistatic properties of
acetylene amines, the authors report biological properties of a series
of resorcline, phloroglucinol, and mesitylene derivatives. The germi-
static activity was tested in vitro on 17 microorganisms. It was found
that only amines with one triple bond in each aliphatic chain were
active. Introduction of a second triple bond led to an almost complete
inactivation of the molecule.

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USSR

UDC 517.955.2

SHATALOV, V. YE., and SHISHMAREV, I. A., Moscow State University imeni M. V. Lomonosov

"Analytical Continuation of Dirichlet Series for Elliptical Boundary Value Problems. II"

Minsk, Differentsial'nyye Uravneniya, Vol. 6, No. 10, Oct 70, pp 1844-1850

Abstract: The problem of finding the eigenfunctions for an elliptical system of r equations of order $2m$ with real coefficients is considered:

$$Au \equiv \sum_{|\alpha| \leq 2m} A_{\alpha}(x) D_{\alpha}^2 u = -\lambda u \quad (x \in g).$$

$$B_{\nu}(x, D)u|_{\Gamma} \equiv \sum_{|k| \leq r_{\nu}} \sum_{l=1}^r b_{\nu}^{(k)} D_{\alpha}^k u = 0,$$

$$\nu = 1, 2, \dots, mr, \quad r_{\nu} \leq 2m - 1.$$

It is assumed that g is an open region in N -dimensional Euclidean space R_N and

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SHATALOV, V. YE., and SHISHMAREV, I. A., Moscow State University imeni M. V. Lomonosov

that Γ is the boundary of this region; α is an N -dimensional vector with natural components. It is shown that under certain conditions the Dirichlet series

$\sum_{n=1}^{\infty} \lambda_n^{-z}$, converging for $\operatorname{Re} z > N/2m$ has an analytic continuation $\phi(z)$ equal to

$$\varphi(z) = \frac{C}{z - \frac{N}{2m}} + \psi(z),$$

where

$$C = V(g) \left\{ \Gamma \left(\frac{N}{2m} \right) (2\pi)^N \right\}^{-1} \int_{R_N} \exp [Q_{2m}(i\tau)] d\tau,$$

and the function $\psi(z)$ is regular for $\operatorname{Re} z > N-1/2m$. The conditions imposed guarantee the presence of a unique self-conjugate expansion in L_2 in A which has a complete orthonormalized system of eigenfunctions $\{u_i(x)\}$ corresponding

to the eigenvalues $\{\lambda_i\}$. It is noted that as a corollary of this theorem one

can evaluate the number $\theta(\lambda)$ of eigenvalues not exceeding λ :

$$\theta(\lambda) = C \lambda^{\frac{N}{2m}} + o \left(\lambda^{\frac{N}{2m}} \right),$$

where

$$C = \frac{V(g)}{\Gamma \left(\frac{N}{2m} \right) (2\pi)^N} \int_{R_N} \exp [Q_{2m}(i\tau)] d\tau.$$

USSR

UDC: 519.2

DIKAREV, V. Ye., SHISHONOK, N. A.

"Servicing a Complex of Systems of Hierarchical Structure"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1972, vyp. 18, pp 58-62 (from RZh-Kibernetika, No 5, May 73, abstract No 5V355 by I. Kovalenko)

Translation: A method is developed for finding the stationary characteristics of a complex hierarchical structure made up of many systems and a single repair center. In each of the subsystems, elements are replaced from the available supply when there are failures; when the supply is partially exhausted, transportation is sent from the subsystem to the repair center for a new set of elements. A very general mathematical model is proposed for the operation of such a system; exact and approximate methods of analyzing its characteristics are considered.

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USSR

UDC 51

DIKAREV, V. YE., SHISHONOK, N. A.

"Optimization of the Reliability Characteristics of Systems by the Method of the Discrete Principle of the Maximum. 1"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical Methods of Investigation and Optimization of Systems -- collection of works), Kiev, 1971, pp 167-176 (from RZh-Kibernetika, No 8, Sep 72, Abstract No 9V519)

No abstract

1/1

USSR

UDC: 8.74

SHISHONOK, N. A., KRENTSER, B. P.

"Use of a Digital Computer for Analysis of the Operational Reliability of Radio Electronic Systems"

V sb. Osnovn. vopr. teorii i praktiki nadezhnosti (Basic Problems in the Theory and Practice of Reliability--collection of works), Moscow, "Sov. radio", 1971, pp 264-285 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1067)

Translation: A procedure is considered for using statistical modeling in analyzing the reliability of radio electronic systems. A brief classification of systems is given, and their operational reliability indices are presented together with generalized flowcharts of algorithms for evaluating the reliability of simple and complex systems. Practical use of the algorithms is illustrated by examples. Authors' abstract.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CHANNELS OF THE PI PRIME POSITIVE PLUS P YIELDS P PLUS PI PRIME
POSITIVE PLUS M GAMMA REACTION AT 2.9 GEV-C -U-
AUTHOR-(04)-BALDIN, A.B., ERGAKOV, V.A., TREBUKHOVSKIY, YU.V., SHISHOV,
N.N.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(4), 800-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PION PROTON INTERACTION, BUBBLE CHAMBER, EXCITATION CROSS
SECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/2207 STEP NO--UR/0367/T0/011/004/0800/0804
CIRC ACCESSION NO--AP0127569
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

GIRC ACCESSION NO--AP0127569

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INVESTIGATION OF THE CHANNELS OF THE REACTION $\pi^+ p \rightarrow \pi^+ p$ YIELDS $\pi^+ p$ PLUS $\pi^+ p$ PRIME POSITIVE PLUS M GAMMA (1) WAS MADE BY MEANS OF A 120-1. C SUB3 H SUB3 XE BUBBLE CHAMBER, EXPOSED TO THE 2.9 GEV-C $\pi^+ p$ PRIME POSITIVE MESON BEAM. PHOTOGRAPHS (150,000) OF 2670 EVENTS OF THE REACTION WITH THE P MOMENTUM P SUBP FROM 02. UP TO 0.6-0.8 GEV-C AND OF 1717 EVENTS WITH P SUBP IS GREATER THAN 0.6-0.8 GEV-C WERE STUDIED. THE BRANCHING RATIOS FOR THE REACTIONS (1) WITH DIFFERENT NOS. OF THE GAMMA QUANTA, 2 GAMMS, (3-4) GAMMA, (5-6) GAMMA, AND (7-8) GAMMA ARE (0.655 PLUS OR MINUS 0.020):(0.256 PLUS OR MINUS 0.012):(0.072 PLUS OR MINUS 0.010):(0.017 PLUS OR MINUS 0.010). CROSS SECTIONS OF THE REACTIONS $\pi^+ p \rightarrow \pi^+ p$ PLUS $\pi^+ p$ PRIME POSITIVE PLUS P YIELDS $\pi^+ p$ PLUS $\pi^+ p$ PRIME POSITIVE WITH M GREATER THAN OR EQUAL TO 1 ARE ESTD. AND SHOWN ON MICROFICHE. AN ANAL. OF THE RELATION BETWEEN THE PARTIAL CROSS SECTIONS AND THE PRIMARY PARTICLE PULSES, FOR THE REACTION $\pi^+ p \rightarrow \pi^+ p$ NEGATIVE PLUS P YIELDS N PLUS NEUTRALS, SHOWED THAT THE CROSS SECTIONS WITHIN THE RANGE OF $\pi^+ p$ PRIME NEGATIVE MESONS, 2.7-3 GEV-C, HAVE A CONST. VALUE WITHIN THE LIMITS OF STATISTICAL ERROR. FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

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UDC 615.849.19:621.375.9/.033

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KOZLOV, A. P., BAZHANOV, YE. B., DIMOV, V. I., TERPUKOV, V. G., and SHISHOV, V. A., Laboratory of High Energies, Institute of Oncology a imeni N. N. Petrov, Ministry of Health USSR, Leningrad

"Distribution of Depth Doses During Irradiation With Bremsstrahlung from a B5M-25 Betatron"

Moscow, Meditsinskaya Radiologiya, Vol 17, No 7, Jul 72, pp 72-76

Abstract: In experiments in which a water phantom was used, the distribution of ionization along the beam axis upon irradiation with bremsstrahlung from the new medical betatron B5M-25 in the energy range $E_{\text{max}} = 12-27$ Mev at DIB values of 80, 100, and 200 cm was studied. It was shown that as the distance from which irradiation of the surface was carried out increased, the ionization maximum at $E_{\text{max}} = 20-27$ Mev was displaced towards greater depths of the tissue-equivalent medium by 2.0 and 0.9 cm for every meter of this distance in irradiation with filtered and unfiltered radiation, respectively. With increasing values of E_{max} , the position of the ionization maximum was displaced at the rate of 0.12 ± 0.05 cm/MeV for both filtered and unfiltered radiation

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ROZLOV, A. P., et al., Meditsinskaya Radiologiya, Vol 17, No 7, (1)

irrespective of the value of DIB. Steel plates were used to filter the radiation. Some characteristics of the isodose curves were determined. There was almost complete coincidence of the position of the 50% isodose with the geometric boundaries of the beam at the depth of the ionization maximum, while any dependence of this position on the dimensions of the radiation field was absent. The results obtained can be used in calculations to determine the optimum procedures in therapy.

2/2

- 100 -

Acc. Nr:

110043931

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

4R 0141

A70-23133 # Strong intensity fluctuations during wave propagation in statistically homogeneous and isotropic media (Sil'nye fluktuatsii intensivnosti pri rasprostraneniі voln v statisticheski odnorodnykh i izotropnykh sredakh). I. M. Dagkesamanskaia and V. I. Shishov (Akademiia Nauk SSSR Fizicheskii Institut, Moscow, USSR); Radiofizika, vol. 13, no. 1, 1970, p. 16-20. 7 refs. In Russian. ZVVKZ

Numerical solution of the differential equation for the fourth momentum of the field of a wave propagating in a statistically homogeneous and isotropic medium. Curves show the dependence of intensity fluctuations on the depth of penetration in the medium. It is shown that extended media exhibit focusing properties—i.e., the intensity fluctuations are maximum at a given distance from the boundary. The effects of source dimensions on the intensity fluctuations are also demonstrated.

T.M.

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REEL/FRAME
19770357

21

USSR

UDC: 621.396.6-181.5

YERMOLAYEV, Yu. P., SHISHOV, V. V., KUTLIN, N. Kh.

"Combination Possibilities of Frequently Used Modules Based on Unified Hybrid Film Circuits"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1970, vyp. 129, pp 39-45 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V188)

Translation: The authors consider various modifications for making up modules for substrates of different dimensions with a predetermined number of microcircuits of various types in order to find the relationship between the maximum number of variations of solutions and the number of substrates of different dimensions. N. S.

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1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--AGING OF REPEATEDLY REWORKED POLYPROPYLENE -U-

AUTHOR--(05)-SHISHOVA, I.S., UTUGOVA, M.F., YUZHIN, V.M., MATVEYEVA,
YE.N., SEMENTSOV, A.D.
COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 39-40

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYPROPYLENE, PLASTIC INJECTION MOLDING, CHEMICAL STABILIZER,
PHENYLENE, DIAMINE, ORGANIC SULFUR COMPOUND, PROPIONATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1377

STEP NO--UR/0191/70/000/003/0039/0040

CIRC ACCESSION NO--AP0128777

UNCLASSIFIED

2/2 015

CIRC ACCESSION NO--AP0128777

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE PHYDICOHEM. CHANGES OCCURING IN POLYPROPYLENE (I) DURING REPEATED INJECTION MOLDING AND THE EFFECTIVENESS OF STABILIZERS WERE INVESTIGATED. REPEATED INJECTION MOLDING AFFECTED ONLY THE MELT INDEX, BUT NOT THE MECH. PROPERTIES OF I. THE MOST EFFECTIVE STABILIZER SYSTEM WAS TOPANOL SA WITH DILAURYL THIODIPROPIONATE, WHEREAS MOLDED I ARTICLES WERE BEST STABILIZED WITH N, N', DI, BETA, NAPHTHYL, P, PHENYLENEDIAMINE.

UNCLASSIFIED

Physiology

USSR

UDC 611.82:611.13.16]-02:612.014.47-

063

SHISHOVA, V. G., First Leningrad Medical Institute imeni Akad. I. P. Pavlov

"Effect of Transverse Accelerations on Spinal Blood Vessels"

Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, No 4, 1973, pp 22-26

Abstract: Rabbits were subjected to transverse accelerations of 10.2 units by centrifugation for varying durations. A 30-sec exposure did not produce any significant quantitative or qualitative changes in the morphology of the vascular bed. However, a 3-min exposure markedly constricted all the arteries, especially the arterioles, and dilated the veins. Longer exposures (20 to 40 min and until death) resulted in more pronounced quantitative and qualitative morphological changes: enlargement of the diameter of the veins, diminution of the diameter of some arteries, especially the arterioles, emptying of some capillaries, twisting of most arteries, spasm and dystonia, phenomena suggestive of steadily increasing disorganization of the architectonics of the blood vessels and of major changes in their walls. These changes were generally uniform over the entire spinal cord, anterior and posterior horns, and anterior and posterior funiculi.

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1/2 017
UNCLASSIFIED
TITLE--SPECIFIC ULTRASTRUCTURAL FEATURES OF THE SMALL INTESTINE MUCOSA IN
PATIENTS WITH CHRONIC ENTEROCOLITIS -U-
AUTHOR--(04)-ZUFAROV, K.A., TASHKHODZHAYEV, P.I., SHISHOVA, YE.K.,
VAYSBOT, V.V.
COUNTRY OF INFO--USSR
PROCESSING DATE--13NOV70
SOURCE--ARKH PATOL 32(1): 45-52. ILLUS. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ENTEROCOLITIS, SMALL INTESTINE, BIOPSY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0237
STEP NO--UR/9056/70/032/001/0045/0052
CIRC ACCESSION NO--AP0134042
UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0134042
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. SAMPLES OF THE SMALL INTESTINE MUCOSA WERE OBTAINED FROM PATIENTS SUFFERING CHRONIC ENTEROCOLITIS BY USING THE ASPIRATION BIOPSY METHOD. PRYSMATIC CELLS OF THE EPITHELIUM WERE STUDIED BY MEANS OF ELECTRON MICROSCOPY. A LARGE NUMBER OF PRYSMATIC ABSORBING CELLS WERE DEMONSTRATED WITH ACCUMULATED AND SECRETED MUCIGEN THUS CHANGING THEIR FUNCTION. THE EPITHELIAL CELLS ARE CONSIDERED PROTECTIVE. THIS REACTION MAY REPRESENT A MORPHOLOGIC BASIS OF THE MALABSORPTION SYNDROME IN PATIENTS SUFFERING FROM CHRONIC ENTEROCOLITIS.

FACILITY: TASHKENT MED. INST., TASHKENT, USSR.

UNCLASSIFIED

USSR

SHIT, YE. E.

UDC 621.396.962

"Some Arguments on Airport Radar"

Tr. Sev.-Zap. zaoch. politekhn. in-ta (Works of the Northwestern Correspondence Polytechnic Institute), 1971, No 15, pp 54-58 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6G39)

Translation: A study is made of the problems of complex design of airport radar equipment using the functional method. The general requirements on the airport radar are discussed taking into account the ICAO recommendations and norms. The tactical-technical characteristics of dispatch radar are presented. There are 2 tables.

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USSR

UDC 621.396.962

SHIT, YE. E.

"Application of the Functional Method in Constructing an Airport Radar Station"

Tr. Sev.-Zap. zaach. politekhn. in-ta (Works of the Northwestern Correspondence Polytechnic Institute), 1971, No 15, pp 51-54 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6G38)

Translation: A qualitative estimate is made of the effect of the functional method of constructing an airport complex on the solution of the problem of controlling the airport zone. It is demonstrated that all control problems can be solved by one dispatch radar selected in accordance with the requirements of the specific airport. The general principles of designing the radar considering the possibility of simulation and application of built-in control devices are discussed.

1/1

- 70 -

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RESULTS OF TESTING METHODS FOR DETERMINATION OF GASES IN
FERROCHROMIUM --U-
AUTHOR--(03)--SHITIKOV, V.S., GEDEREVICH, N.A., SHULTE, YU.A.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(2), 149-50
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FERROCHROMIUM, GAS CONTAINING METAL, METAL CONTAINING GAS,
FERROALLOY, OXYGEN, NITROGEN, HYDROGEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1054 STEP NO--UR/0032/70/036/002/0149/0150
CIRC ACCESSION NO--AP0123047
UNCLASSIFIED